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| 09/600,607      | 07/19/2000  | MAARTEN KUIJPER      | PHN16.643           | 5334             |

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EXAMINER

SCHECHTER, ANDREW M

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/600,607

Applicant(s)

KUIJPER, MAARTEN

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on November 19, 1997. It is noted, however, that applicant has not filed a certified copy of this application as required by 35 U.S.C. 119(b).

### *Drawings*

2. The drawings are objected to because of the way Fig. 2(b) shows the angle  $\phi$  between 29 and 41. The direction of 35 would be vertically down in the plane of the page (negative y-direction), the angle should be swept out below the x-axis (compare p. 7, lines 30-32, which says "rotated 5° in the direction of the projection of the mid-plane director", emphasis added). The drawing is therefore not consistent with the definition of  $\phi$ . (This is a minor point, since only the magnitude of  $\phi$  is presently used in the claims.) A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Response to Arguments*

3. Applicant's arguments filed 13 November 2002 have been fully considered but they are not persuasive.

The applicant argues that *Xu* and *Kawata* teach away from the present invention by disclosing more than one birefringence-compensating element. This is not persuasive. To the contrary, both *Xu* and *Kawata* disclose embodiments with a single birefringence-compensating element and with more than one birefringence-compensating element. The previous rejections explicitly pointed out the former (relevant) embodiments; these rejections are therefore repeated below.

The applicant argues that *Masumoto* discloses a pair [12 and 13] of such elements, so that it teaches “more than one compensation element, and thus teach[es] away from Applicant’s invention, in which a single compensation element is claimed” [p. 9]. This clarifies the issue which provoked the previous rejection of claim 1 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, namely what does “single” mean. From this response, the examiner understands that multiple birefringence compensating elements, in the same location or at different locations in the device, are outside the scope of these claims. With this in mind, the previous rejections in view of *Masumoto* are withdrawn.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Xu*, U.S. Patent No. 6,057,901 in view of *Abileah et al.*, U.S. Patent No. 5,737,048.

*Xu* discloses [see Fig. 14] a liquid crystal display panel comprising polarizers [3, 19] around a TN liquid crystal panel [11], with a birefringence-compensating element [31] between the panel and a polarizer [it can be used singly, as emphasized by the author, col. 9, lines 39-42]. The element has a tilted optical director profile.

*Xu* does not disclose the intended use of the panel being as part of an image projection system with an illumination system and an optical system (either an ordinary projector or a head-mounted one); the examiner takes official notice that this intended use for liquid crystal panels is well-known and conventional, and would be obvious to one of ordinary skill in the art motivated by, among other reasons, having additional commercial applications for the panel and being able to display the image to a larger audience.

*Xu* does not explicitly disclose the angle  $\phi$ . First, the examiner notes that given the above discussion of the “active rubbing direction” being either of the two rubbing directions (which are at 90° to each other), the angle  $\phi$  must inherently be different from 0° with respect to one of them, so the limitation is met. Second, the angle  $\phi$  is discussed by *Abileah* (of which *Xu* is also an author) in an analogous context [see Figs. 4-6, etc.]. They teach that the effect of rotating the optical axis [by an angle labeled  $\theta$  in that reference] is “to shift the viewing zone or envelope of the display” and teaches that this is advantageous “because it allows for excellent positive or negative vertical viewing

characteristics in situations where they are needed" [col. 9, line 39 – col. 10, line 4]. In particular, they teach using an angle of "most preferably from about 6°-10°". It would be obvious to do so in the device of *Xu*, motivated by the above teaching of *Abileah*.

Claims 1, 3, 4, 7, and 8 are therefore unpatentable.

6. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kawata et al.*, U.S. Patent No. 5,736,067 in view of *Abileah et al.*, U.S. Patent No. 5,737,048.

*Kawata* discloses [see Figs. 2, 4] a liquid crystal display panel comprising polarizers [A, B] around a TN liquid crystal panel [TNC], with a birefringence-compensating element [RF1, note col. 16, lines 35-37 that the invention may be used with just one of RF1 and RF2] between the panel and a polarizer. The element has a tilted optical director profile and a negative birefringence.

*Kawata* does not disclose the intended use of the panel being as part of an image projection system with an illumination system and an optical system (either an ordinary projector or a head-mounted one); the examiner takes official notice that this intended use for liquid crystal panels is well-known and conventional, and would be obvious to one of ordinary skill in the art motivated by, among other reasons, having additional commercial applications for the panel and being able to display the image to a larger audience.

*Kawata* does not explicitly disclose the angle  $\phi$ . First, the examiner notes that given the above discussion of the "active rubbing direction" being either of the two rubbing directions (which are at 90° to each other), the angle  $\phi$  must inherently be

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different from  $0^\circ$  with respect to one of them, so the limitation is met. Second, the angle  $\phi$  is discussed by *Abileah* in an analogous context [see Figs. 4-6, etc.]. They teach that the effect of rotating the optical axis [by an angle labeled  $\theta$  in that reference] is “to shift the viewing zone or envelope of the display” and teaches that this is advantageous “because it allows for excellent positive or negative vertical viewing characteristics in situations where they are needed” [col. 9, line 39 – col. 10, line 4]. In particular, they teach using an angle of “most preferably from about  $6^\circ$ - $10^\circ$ ”. It would be obvious to do so in the device of *Kawata*, motivated by the above teaching of *Abileah*. Claims 1-5, 7, and 8 are therefore unpatentable.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-4711 for regular communications and (703) 746-4711 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Andrew Schechter  
January 27, 2003



TOANTON  
PRIMARY EXAMINER